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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,247	01/09/2002	Takao Ohno	Q68006	1966

7590

08/12/2003

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EXAMINER

VO, HAI

ART UNIT

PAPER NUMBER

1771

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/030,247

Applicant(s)

OHNO ET AL.

Examiner

Hai Vo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 and 27-36 is/are pending in the application.
- 4a) Of the above claim(s) 8-24 and 27-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 1771

1. Claims 25 and 26 have been canceled in the amendment received on 05/03/2003.

Election/Restrictions

2. Applicant's election without traverse of Group I, claims 1-7, 25 and 26 in Paper No. 8 is acknowledged.
3. Newly submitted claim 35 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:
 - I. Claims 1-7, 25, 26, 36 drawn to a porous film, classified in class 428, subclass 304.4+.
 - II. Claim 35, drawn to a method of using a porous film, classified in class 429, subclass various.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the process for using the product as claimed can be practiced with another materially different product such as a paraphenylenediamine porous film instead.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 35 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
6. Claims 1-3 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tamura et al (US 4,539,393) substantially as set forth in Paper no. 8.
7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al (US 4,539,393) substantially as set forth in Paper no. 8.

8. Claims 5-7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al (US 4,539,393) in view of Tsutsumi et al (US 5,571,875) substantially as set forth in Paper no. 8.
9. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al (US 4,539,393) in view of JP 59-14494 as evidenced by Kawakami (US 5,888,666). Tamura is silent as to the use of the porous film as a battery separator of a lithium ion battery. JP'494 teaches the use of the porous aramid film as a battery separator of a lithium ion battery (claims 1-4). Kawakami teaches a secondary battery comprising a cathode, an anode and a polymeric film between the cathode and the anode (figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the porous aramid film of Tamura as a battery separator of a lithium ion battery because such is the intended use of the materials and Kawakami provides the necessary details to practice the invention of Tamura/JP'494.

Response to Arguments

10. The art rejections over Tamura have been maintained for the following reasons. Applicants argue that Tamura merely teaches a film of an undeveloped porous structure different from the porous film of the present invention because the pore are formed through the stretching in Tamura while the present invention, the pores are formed through the phase separation during the coagulating step. The arguments are not found persuasive. Since the coagulating bath of Tamura appears to be made of the same compositions as that of Applicants: a metal salt,

an amide-based solvent in the amount of 30 wt% within the range disclosed by Applicants (column 7, lines 50-55, example 1 vs. Applicants' specification, page 10, line 31 et seq.), and the film of Tamura and Applicants are then subjected to drying to remove the solvent to create the pores. It is not seen that the pores would have been undeveloped through the phase separation during the coagulating step in Tamura's film.

Further, the arguments are not commensurate in scope with the claims since nothing specific about the processing steps has been included in the product claims. The product-by-process limitations need to be incorporated into the product claims and Applicants further needs to provide evidence or explain in full details why the pores in Tamura would have not been inherently developed through the phase separation during the coagulating step in view of the product-by-process limitations.

Tamura does not specifically disclose the obtained film being porous by adding an inorganic salt to the coagulating bath. However, both Tamura and Applicants happen to use the inorganic salt in the coagulating bath, it is the examiner's position that the film in Tamura would have inherently possessed a porous structure prior to stretching. Since the porous film of the present invention is produced from the same materials and the same process disclosed by Tamura, it is the examiner's position that the gas permeability, porosity and cross-sectional pore laminar coefficient would be inherently present.

The examiner has overlooked the Km unit of a Young's modulus in the claims. She thought Km was an abbreviation of kg/mm². However, a specific Young's modulus or specific modulus is Young's modulus divided by density (Property Information article). Since Tamura and Applicants appear to use polymetaphenylene isophthalamide to form a porous film (identical density), Applicants' specific Young's modulus should be directly proportional to the Young's modulus disclosed by Tamura.

Conclusion

11. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (703) 605-


Art Unit: 1771

4426. The examiner can normally be reached on Tue-Fri, 8:30-6:00 and on alternating Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

HV
August 4, 2003


TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700